

**WHAT IS CLAIMED IS:**

**1. A high pressure water jet surface cutting device that comprises a high pressure water jet nozzle head which can be moved in X and Y directions while being rotated, and that cuts a resin matrix portion on a surface of a composite molded article consisting of inorganic particles and a resin, wherein**

**a plurality of high pressure water jet nozzles are arranged on said nozzle head, high pressure water jet centers of at least one or more nozzles being arranged at inclined angles with respect to perpendicular positions to a foundation layer surface of said composite molded article, respectively.**

**2. The high pressure water jet surface cutting device according to claim 1, wherein**

**the inclined angles of the at least one or more nozzles are within a range of 45°.**

**3. The high pressure water jet surface cutting device according to claim 1 or 2, wherein**

**the at least one or more nozzles arranged at the inclined angles are at orthogonal positions to a tangent of the nozzle head to be directed outward of a rotation center of the nozzle head or directed inward toward the rotation center.**

**4. The high pressure water jet surface cutting device according to any one of claims 1 to 3, wherein**

**the at least one or more nozzles are arranged so that the jet centers are at perpendicular positions at the inclined angles of 0° with respect to the foundation layer surface.**

**5. The high pressure water jet surface cutting device according to any one of claims 1 to 4, wherein**

**the plurality of high pressure water jet nozzles are arranged at at least two or more circumferential positions having different distances from the rotation center of the nozzle head.**

**6. The high pressure water jet surface cutting device according to claim 5, wherein**

**the plurality of nozzles arranged at an equal circumferential position are arranged at symmetric positions about the rotation center of the nozzle head.**

**7. The high pressure water jet surface cutting device according to claim 5 or 6, wherein**

**the plurality of nozzles arranged at the equal circumferential position are arranged at the same inclined angle or equally perpendicularly, and form an equal arrangement angle with respect to a tangent.**

**8. The high pressure water jet surface cutting device according to any one of claims 5 to 7, wherein**

**the nozzles arranged at a plurality of circumferential positions, respectively, differ in inclined angle.**

**9. A surface cutting method using the surface cutting device according to any one of claims 1 to 8, comprising a step of:**

**cutting the resin matrix portion on the surface of the composite molded**

**article while moving the nozzle head in the X and Y directions so that areas among loci of the jet centers with respect to the foundation layer surface of said composite molded article against which a jet water from the nozzles is stricken are uniform.**

**10. The cutting method according to claim 9, comprising a step of cutting away the resin matrix portion having a thickness within a range of 10  $\mu\text{m}$  to 10 mm.**

**11. The cutting method according to claim 9 or 10, comprising a step of cutting the surface of the composite molded article that includes an irregular surface having a height from the foundation layer surface within a range of 1 to 100 mm.**